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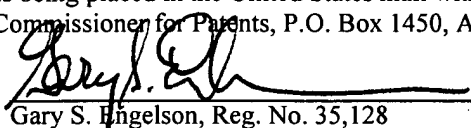
Docket No.: T2001-701819
Old Docket No.: RMH 10969

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Roberto O. Pellizzari et al.
Serial No: 10/665,914
Confirmation No.: 7073
Filed: September 19, 2003
For: MACHINE SPRING DISPLACER FOR STIRLING CYCLE MACHINES
Examiner: Richter, S.
Art Unit: 3748

CERTIFICATE OF MAILING UNDER 37 CFR §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Mail Stop Issue Fee, the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the 1st day of March 2006.


Gary S. Engelson, Reg. No. 35,128

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL


Sir:

Transmitted herewith are the following documents:

- ☒ [X] Revocation Of Prior Powers Of Attorney and New Power Of Attorney
- ☒ [X] Certificate Under 37 C.F.R. 3.73(b) with copies of three assignments

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 395-7000. A check is not enclosed. If a fee is required, the Commissioner is hereby authorized to charge Deposit Account No. 50/2762, ref. no. T2001-701919. A duplicate of this sheet is enclosed.

Respectfully submitted,
Roberto O. Pellizzari et al., Applicant


Gary S. Engelson, Reg. No. 35,128
LOWRIE, LANDO & ANASTASI, LLP
Riverfront Office Park
One Main Street
Cambridge, MA 02142
(617) 395-7000

Dated: March 1, 2006
780848.1



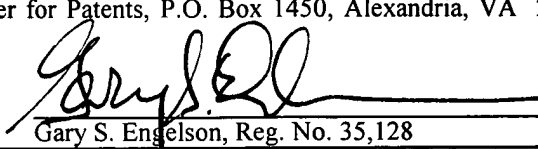
New Docket No.: T2001-701819
Old Docket No.: RMH 10969

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: R. PELLIZZARI et al.
Serial No: 10/665,914
Conf. No.: 7073
Filed: 09/19/2003
For: MACHINE SPRING DISPLACER FOR STIRLING CYCLE MACHINES
Examiner: RICHTER, S.
Art Unit: 3748

CERTIFICATE OF MAILING UNDER 37 CFR §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the 1st day of March, 2006.


Gary S. Engelson, Reg. No. 35,128

Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**REVOCATION OF PRIOR POWERS OF ATTORNEY
and
NEW POWER OF ATTORNEY**

The undersigned, TIAX LLC, assignee of the entire right, title and interest of the above-identified application, and in any divisional, continuing, substitute, renewal or reissue application(s) thereof, hereby revokes all powers of attorney previously given and appoints all practitioners of Lowrie, Lando & Anastasi, LLP associated with Customer Number:

37462

as assignee's attorneys or agents with full power of substitution to take any and all action necessary with regard to the identified patents and patent applications, and with regard to any divisional, continuing, substitute, renewal or reissue application(s) thereof:


Please address all telephone calls to Gary S. Engelson at telephone no. (617) 395-7000.

Please address all correspondence to the correspondence address associated with
Customer Number:

37462


Please change the Attorney Docket Number to: T2001-701819.

TIAX LLC

By: 
Name: John A. Cameros
Title: PRESIDENT

ASSIGNEE CERTIFICATION

Attached to this power is a Certificate Under 37 CFR 3.73(b).

Dated: March 1, 2006 
Gary S. Engelson, Reg. No. 35,128
LOWRIE, LANDO & ANASTASI, LLP
Riverfront Office Park
One Main Street
Cambridge, MA 02142
(617) 395-7000

777575.1



CERTIFICATE UNDER 37 CFR 3.73(b)

Applicant: Roberto O. Pellizzari et al.
Application/Patent No.: 10/665,914 Filed/Issued: September 19, 2003
Confirmation No.: 7073
Entitled: MACHINE SPRING DISPLACER FOR STIRLING CYCLE MACHINES

TIAX LLC

, a Delaware corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

certifies that it is the assignee of the entire right, title, and interest in the patent application/patent identified above by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

OR

B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: Roberto O. Pellizzari et al. To: TIAX LLC

A copy is attached.

2. From: TIAX LLC To: Chrysalis Technologies Incorporated

A copy is attached.

3. From: Chrysalis Technologies Incorporated To: Philip Morris USA Inc.

The document was recorded in the Patent and Trademark Office at

Reel 016846 Frame 0634 .

4. From: Philip Morris USA Inc. To: TIAX LLC

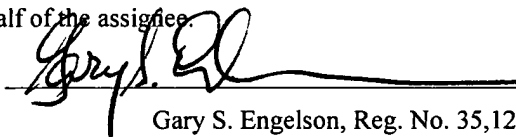
☐ Additional documents in the chain of title are listed on a supplemental sheet.

☒ Copies of assignments or other documents in the chain of title are attached.

The undersigned is authorized to act on behalf of the assignee.

March 1, 2006

Date



Gary S. Engelson, Reg. No. 35,128

ASSIGNMENT NUNC PRO TUNC

For good and valuable consideration, the sufficiency and receipt of which is hereby acknowledged, we, the undersigned **Roberto O. Pellizzari** of Groton, MA 01450, **Laurence B. Penswick** of Stevenson, WA 98648, and **David Gedeon** of Athens, OH 45701, hereby:

Sell, assign and transfer to **TIAX LLC**, a Delaware limited liability company having a place of business at 15 Acorn Park, Cambridge, MA 02140, its successors, assigns and legal representatives, all hereinafter referred to as the Assignee, *nunc pro tunc* January 4, 2004, the entire right, title and interest for the United States and all foreign countries, in and to any and all inventions which are disclosed in the application for United States Letters Patent filed in the United States Patent and Trademark Office on September 19, 2003 under Application Serial No. **10/665,914** and entitled **MACHINE SPRING DISPLACER FOR STIRLING CYCLE MACHINES**, and in and to said application and all divisional, continuing, substitute, renewal, reissue and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on any of said inventions; and in and to all original and reissued patents which have been or shall be issued in the United States and all foreign countries on said inventions including the right to apply for patent rights in each foreign country and all rights to priority; and further including any right to sue for past infringement;

Agree that said Assignee may apply for and receive Letters Patent for said inventions in its own name; and when requested, without charge to but at the expense of said Assignee, we agree to carry out in good faith the intent and purpose of this assignment, by executing all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all said inventions, by executing all rightful oaths, assignments, powers of attorney and other papers, by communicating to said Assignee all facts known to us relating to said inventions and the history thereof, and generally by doing everything reasonably possible which said Assignee shall consider desirable for aiding in securing and maintaining proper patent protection for said inventions and for vesting title to said inventions and all applications for patents and all patents on said inventions, in said Assignee;

Request the Honorable Commissioner of Patents and Trademarks to issue said Letters Patent to said Assignee; and

Covenant with said Assignee that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by us and that full right to convey the same as herein expressed is possessed by us.

[Signature pages follow.]

Date

Roberto O. Pellizzari

STATE OF _____:
COUNTY OF _____:

On this ____ day of _____, 20__, before me, the undersigned notary public, personally appeared Roberto O. Pellizzari, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

(SEAL)

Printed Name of Notary Public
My commission expires _____

Date

Laurence B. Penswick

STATE OF _____:
COUNTY OF _____:

On this ____ day of _____, 20__, before me, the undersigned notary public, personally appeared Laurence B. Penswick, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

(SEAL)

Printed Name of Notary Public
My commission expires _____

20 January 2006
Date

David Gedeon
David Gedeon

STATE OF Ohio :
COUNTY OF Athens :

On this 20th day of January, 2006, before me, the undersigned notary public, personally appeared David Gedeon, proved to me through satisfactory evidence of identification, which were David K. Gedeon, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.



777909.1

Tonia Martin
Tonia Martin
Printed Name of Notary Public
My commission expires 8/21/2007

ASSIGNMENT NUNC PRO TUNC

For good and valuable consideration, the sufficiency and receipt of which is hereby acknowledged, we, the undersigned **Roberto O. Pellizzari** of Groton, MA 01450, **Laurence B. Penswick** of Stevenson, WA 98648, and **David Gedeon** of Athens, OH 45701, hereby:

Sell, assign and transfer to **TIAX LLC**, a Delaware limited liability company having a place of business at 15 Acorn Park, Cambridge, MA 02140, its successors, assigns and legal representatives, all hereinafter referred to as the Assignee, *nunc pro tunc* January 4, 2004, the entire right, title and interest for the United States and all foreign countries, in and to any and all inventions which are disclosed in the application for United States Letters Patent filed in the United States Patent and Trademark Office on September 19, 2003 under Application Serial No. 10/665,914 and entitled **MACHINE SPRING DISPLACER FOR STIRLING CYCLE MACHINES**, and in and to said application and all divisional, continuing, substitute, renewal, reissue and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on any of said inventions; and in and to all original and reissued patents which have been or shall be issued in the United States and all foreign countries on said inventions including the right to apply for patent rights in each foreign country and all rights to priority; and further including any right to sue for past infringement;

Agree that said Assignee may apply for and receive Letters Patent for said inventions in its own name; and when requested, without charge to but at the expense of said Assignee, we agree to carry out in good faith the intent and purpose of this assignment, by executing all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all said inventions, by executing all rightful oaths, assignments, powers of attorney and other papers, by communicating to said Assignee all facts known to us relating to said inventions and the history thereof, and generally by doing everything reasonably possible which said Assignee shall consider desirable for aiding in securing and maintaining proper patent protection for said inventions and for vesting title to said inventions and all applications for patents and all patents on said inventions, in said Assignee;

Request the Honorable Commissioner of Patents and Trademarks to issue said Letters Patent to said Assignee; and

Covenant with said Assignee that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by us and that full right to convey the same as herein expressed is possessed by us.

[Signature pages follow.]

2/7/2006
Date

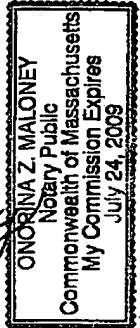
Roberto O. Pellizzari
Roberto O. Pellizzari

STATE OF _____:
COUNTY OF _____:

On this 7th day of February, 2006, before me, the undersigned notary public, personally appeared Roberto O. Pellizzari, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

(SEAL)

Onorina Z. Maloney
Printed Name of Notary Public
My commission expires July 24, 2009



Date

Laurence B. Penswick

STATE OF _____:
COUNTY OF _____:

On this _____ day of _____, 20__, before me, the undersigned notary public, personally appeared Laurence B. Penswick, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

(SEAL)

Printed Name of Notary Public
My commission expires _____

Date

David Gedeon

STATE OF _____:
COUNTY OF _____:

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared David Gedeon, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

(SEAL)

Printed Name of Notary Public
My commission expires _____

777909.1

ASSIGNMENT NUNC PRO TUNC

For good and valuable consideration, the sufficiency and receipt of which is hereby acknowledged, we, the undersigned **Roberto O. Pellizzari** of Groton, MA 01450, **Laurence B. Penswick** of Stevenson, WA 98648, and **David Gedeon** of Athens, OH 45701, hereby:

Sell, assign and transfer to **TIAX LLC**, a Delaware limited liability company having a place of business at 15 Acorn Park, Cambridge, MA 02140, its successors, assigns and legal representatives, all hereinafter referred to as the Assignee, *nunc pro tunc* January 4, 2004, the entire right, title and interest for the United States and all foreign countries, in and to any and all inventions which are disclosed in the application for United States Letters Patent filed in the United States Patent and Trademark Office on September 19, 2003 under Application Serial No. **10/665,914** and entitled **MACHINE SPRING DISPLACER FOR STIRLING CYCLE MACHINES**, and in and to said application and all divisional, continuing, substitute, renewal, reissue and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on any of said inventions; and in and to all original and reissued patents which have been or shall be issued in the United States and all foreign countries on said inventions including the right to apply for patent rights in each foreign country and all rights to priority; and further including any right to sue for past infringement;

Agree that said Assignee may apply for and receive Letters Patent for said inventions in its own name; and when requested, without charge to but at the expense of said Assignee, we agree to carry out in good faith the intent and purpose of this assignment, by executing all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all said inventions, by executing all rightful oaths, assignments, powers of attorney and other papers, by communicating to said Assignee all facts known to us relating to said inventions and the history thereof, and generally by doing everything reasonably possible which said Assignee shall consider desirable for aiding in securing and maintaining proper patent protection for said inventions and for vesting title to said inventions and all applications for patents and all patents on said inventions, in said Assignee;

Request the Honorable Commissioner of Patents and Trademarks to issue said Letters Patent to said Assignee; and

Covenant with said Assignee that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by us and that full right to convey the same as herein expressed is possessed by us.

[Signature pages follow.]

Date

Roberto O. Pellizzari

STATE OF _____:
COUNTY OF _____:

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared Roberto O. Pellizzari, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

(SEAL)

Printed Name of Notary Public
My commission expires _____

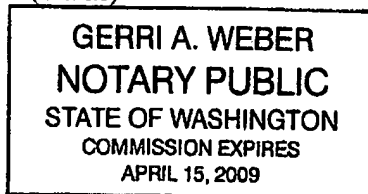
22 Feb 06
Date

Laurence B. Penswick
Laurence B. Penswick

STATE OF Washington:
COUNTY OF Skamania:

On this 22nd day of February, 2006, before me, the undersigned notary public, personally appeared Laurence B. Penswick, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

(SEAL)



Gerri A. Weber
Gerri A. Weber
Printed Name of Notary Public
My commission expires 4/15/09

Date

David Gedeon

STATE OF _____:
COUNTY OF _____:

On this _____ day of _____, 20____, before me, the undersigned notary public, personally appeared David Gedeon, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

(SEAL)

Printed Name of Notary Public
My commission expires _____

777909.1

777909.1

ASSIGNMENT *NUNC PRO TUNC*

Whereas, TIAX LLC having a place of business at 15 Acorn Park, Cambridge, MA 02140 (ASSIGNOR) is the owner of the entire right, title and interest in and to the following application and in and to all inventions which are disclosed therein:

| Application No. | Date of Filing or Grant |
|------------------------|--------------------------------|
| 10/665,914 | September 19, 2003 |

Whereas, Chrysalis Technologies Incorporated, then having a place of business at 7801 Whitepine Road, Richmond, VA 23237 (ASSIGNEE) then desired to acquire all rights in said application, any inventions disclosed therein, and any and all patent(s) of the United States and of all other countries which may be granted for the said inventions;

Now therefore, for good and valuable consideration, the sufficiency of which is acknowledged and the receipt of which is hereby acknowledged, ASSIGNOR does hereby sell, assign and transfer to the said ASSIGNEE, *nunc pro tunc* August 31, 2004, the entire right, title and interest in and to the said application, and all inventions therein disclosed and any and all patents of the United States and of all other countries which may be granted for the said inventions.

Said ASSIGNEE, its successors and assigns, shall have, hold and enjoy the said application, invention(s) and any and all patent(s) of the United States and of all other countries which may be granted for the said inventions, to its own use and benefit as fully and entirely as the same would have been held and enjoyed had this assignment and sale not been made, including any right to sue for past infringement.

ASSIGNOR hereby authorizes and requests each respective Patent and Trademark Office to issue any Patent as may be granted on the said inventions to the said Assignee in accordance with the terms of this instrument.

[Signature page follows.]

TIAX LLC

Date: 19 JAN. 2006

By: 

JOHN M. COLLINS

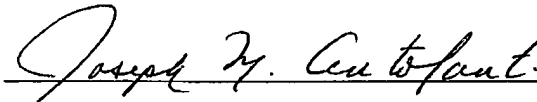
Printed name of person signing

PRESIDENT

Printed title of person signing

COMMONWEALTH OF MASSACHUSETTS:
COUNTY OF MIDDLESEX:

On this 19th day of JANUARY, 2006, before me, the undersigned notary public, personally appeared JOHN M. COLLINS, proved to me through satisfactory evidence of identification, which were PERSONAL KNOWLEDGE, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.



JOSEPH M. CENTOFANTI

Printed Name of Notary Public

My commission expires JUNE 19 2009

(SEAL)

778081.1

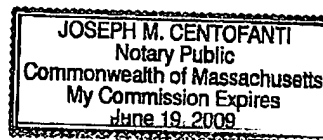


EXHIBIT C

ASSIGNMENT OF PATENTS AND PATENT APPLICATIONS

WHEREAS, Philip Morris USA Inc., a Virginia corporation with offices at 6601 West Broad Street, Richmond, Virginia 23230-1701 ("PM USA"), is the owner of the patents and the patent applications identified on Schedule A attached hereto and the inventions disclosed and claimed therein; and

WHEREAS, TIAX LLC, a Delaware limited liability company with offices at 15 Acorn Park, Cambridge, Massachusetts 02140 ("TIAX"), desires to acquire said patents, patent applications and the inventions disclosed and claimed therein;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, PM USA does hereby assign, sell and transfer unto TIAX all right, title and interest in and to the said patents and patent applications identified on Schedule A and the inventions disclosed and claimed therein, together with the right to sue and recover for, and the right to profits or damages due or accrued arising out of or in connection with, any and all past, present or future infringements of said patents, patent applications (and any patent(s) issuing with respect thereto) or inventions.

IN WITNESS WHEREOF, PM USA by its duly authorized officer has executed this assignment, as an instrument under seal to be effective the 2 day of Dec., 2005.

PHILIP MORRIS USA INC.

By: 

Name: Roy K. Anise

Title: Vice President and General Manager

STATE OF Virginia)
) ss.
COUNTY OF unincorporated

On this the 2 day of Dec., 2005 before me appeared Roy Anise, the person who signed this instrument, who acknowledged that s/he is a officer of Philip Morris USA Inc. and that s/he signed such instrument as a free act on behalf of Philip Morris USA Inc.

Marion D. Bellant
Notary Public

My Commission expires: 5/31/08

**SCHEDULE A TO ASSIGNMENT OF PATENTS AND PATENT
APPLICATIONS**

| Docket No. | Application No. | Country | Filing Date | Title | Status |
|------------|-----------------|---------|--|--|-----------|
| F009 | 10/883,393 | US | 7/1/2004 (Provisional filed 7/2/2003) | Free Piston Stirling Engine Control | Published |
| F009 PCT | PCT/US/04/21289 | WO | 7/1/2004 | Free Piston Stirling Engine Control | Published |
| F009 TW | 093120115 | TW | 7/2/2004 | Free Piston Stirling Engine Control | Pending |
| F024 | 10/883,310 | US | 7/1/2004 (Provisional filed 7/1/2003) | Impingement Heat Exchanger for Generating Power | Published |
| F024 PCT | PCT/US/04/21290 | WO | 7/1/2004 | Impingement Heat Exchanger for Generating Power | Published |
| F024 TW | 093119925 | TW | 7/1/2004 | Impingement Heat Exchanger for Generating Power | Pending |
| F025 | 10/883,390 | US | 7/1/2004 (Provisional filed 7/1/2003) | Capacitive Position Sensor and Sensing Methodology | Published |
| F025 PCT | PCT/US/04/21287 | WO | 7/1/2004 | Capacitive Position Sensor and Sensing Methodology | Published |

| Docket No. | Application No. | Country | Filing Date | Title | Status |
|-------------|-----------------|---------|--|--|-----------|
| F025 TW | 093120115 | TW | 7/1/2004 | Capacitive Position Sensor and Sensing Methodology | Pending |
| F026 | 10/883,511 | US | 7/1/2004 (Provisional filed 7/1/2003) | Recuperator and Combustor for Use in External Combustion Engines | Published |
| F026 PCT | PCT/US/04/21288 | WO | 7/1/2004 | Recuperator and Combustor for Use in External Combustion Engines | Published |
| F026 TW | 093120011 | TW | 7/1/2004 | Recuperator and Combustor for Use in External Combustion Engines | Pending |
| F029 | 10/943,545 | US | 9/17/2004 (Provisional filed 9/17/2003) | Threaded Sealing Flange for Use in an External Combustion Engine | Published |
| F029 PCT | PCT/US/04/30479 | WO | 9/17/2004 | Threaded Sealing Flange for Use in an External Combustion Engine | Pending |

| Docket No. | Application No. | Country | Filing Date | Title | Status |
|-------------|-----------------|---------|-------------|--|-----------|
| F029 TW | 093128400 | TW | 9/19/2004 | Threaded Sealing Flange for Use in an External Combustion Engine | Pending |
| F030 | 10/665,914 | US | 9/19/2003 | Machined Spring Displacer for Stirling Cycle Engines | Published |
| F030 PCT | PCT/US/04/30481 | WO | 9/17/2004 | Machined Spring Displacer for Stirling Cycle Engines | Pending |
| F030 TW | 093128392 | TW | 9/17/2004 | Machined Spring Displacer for Stirling Cycle Engines | Pending |
| F033 | 10/920,474 | US | 8/18/2004 | Fluid Displacement Pump | Pending |
| F033 PCT | TBD | WO | 8/18/2005 | Fluid Displacement Pump | Pending |
| F033 MY | TBD | MY | 8/18/2005 | Fluid Displacement Pump | Pending |
| F033 TH | TBD | TH | 8/18/2005 | Fluid Displacement Pump | Pending |
| F033 TW | TBD | TW | 8/18/2005 | Fluid Displacement Pump | Pending |